Program Review 1/2001

Integrated Field Testing of Fuel Cells and Micro-Turbines

New Jersey Board of Public Utilities

Cooperative Agreement DE-FC26-00NT41012

Federal	$340,760
Non-Federal	$100,000
In-kind	$0
Total	$440,760

Goals and Objectives

- **The New Jersey Board of Public Utilities, Division of Energy and its collaborators, Conectiv and Electrotek Concepts, propose to address the significant technical and economic challenges of evaluation and implementing advanced distributed generation technologies on Long Beach Island, New Jersey. Consistent with the mission of the Department of Energy, Office of Energy Efficiency & Renewable Energy (EERE) of promoting energy efficiency, advancing new and innovative technologies, and reducing the environmental impact of energy use, the project team proposes to evaluate and if feasible, develop a program of incremental distributed generation.**

Scope of Work

- **The scope of this project is to examine the use of distributed power systems and combined heat and power (CHP) technologies to help Long Beach Island, New Jersey address unusually high seasonally variabilities in electricity demand in the most cost effective way possible. The scope of this effort will be conducted in three phases. In the first budget period, using sophisticated modeling techniques developed by Electrotek, the Recipient will conduct a technical and economic analysis of the Long Beach Island distribution system, as well as the sub-transmission and transmission system to determine if, when and where advanced distributed generation technologies would be appropriate to improve system reliability and to decrease system cost. Long Beach Island is a barrier island located in Ocean County, NY. The island, which takes service from Atlantic Electric, is characterized by a very low load factor and significant summer peaks.**

FY-00 Major Accomplishments and Impacts

- Project Manager Assigned 09/05/2000
- Contract Specialist Assigned 09/07/2000
- PM Received Proposal 09/07/2000
- EE Funds to NETL 09/15/2000
- Contract Awarded 09/30/2000
- NEPA Cx-B Signed 09/30/2000

Planned Work for FY-01

- Circuit Model with “Distco Sim^{tm}”
- Technical Analysis Base Case
- Develop Alternative Cases
- Technical Analysis of Alternative Cases

Planned Activities for FY-2002

- Economic Analysis
- Decision Point for Phase II/III

Project Benefits and Impacts

- The project offers several significant benefits. It offers an opportunity to evaluate and to realize the benefits of advanced distributed generation technologies, thus further promoting their use. With Advanced DG technology, Conectiv hopes first to defer, or potentially eliminate the need for additional investment in sub-transmission level supply to the island. Also, with proper location, it is believed that distribution system reinforcement on the island could perhaps be deferred or eliminated. Additionally, the energy provided by DG might even defer the need for transmission system upgrades required to provide service to the substations serving Long Beach Island. And finally, the use of advanced DG technologies will offer environmental benefits as well.

Issues/Concerns

- None